



WINTER WEATHER AWARENESS

A Campaign by the
National Weather Service
Tennessee Emergency Management
Agency
North Carolina Emergency
Management
Virginia Department of Emergency
Services

Tennessee November 16-18, 2004

Virginia December 5-11, 2004

North Carolina December 5-11, 2004

Winter is approaching. Hazardous weather can strike with little notice. Tornadoes strike with unwanted regularity. As winter approached two years ago, Tennesseans experienced the secondary severe weather maximum at its worst with the Veterans Day Tornado outbreak. Severe thunderstorms with downburst winds and large hail occur even more frequently. Floods and flash floods can wash people and property away with little notice.

The National Weather Service and the State Emergency Management Agencies would like to bring another weather threat to the forefront and heighten everyone's awareness of this significant weather threat – Winter Weather.

Last winter was a little nearer to normal there were several significant snow events across the southern Appalachians. January 2003 16th saw a snowstorm move across the southern Appalachian region with 4 to 8 inches of snow in many areas. Ample forecast and warning time allowed road crews to react and prevent major problems.

The winters prior to last year were relatively mild across the region and lulled everyone into a feeling that those were what a "Normal" winter is like. The Christmas Eve 1998 ice storm caused over 17 million dollars of damage and widespread transportation problems. The winter of 95-96 saw many areas of the Southeastern U.S. experiencing a number of very heavy snow and ice storms. Heavy snow or ice can trap people in their homes or auto-

mobiles. People are inconvenienced, injured or even killed.

Even without snow or ice, intense cold can injure or kill before a person is aware they are at risk. Fatalities from hypothermia have occurred in air temperatures of 40-50 degrees. Persons with certain chronic health conditions and those over 65 are more at risk for hypothermia, **even within the home.**

One hazard we do not often associate with winter is flooding. Floods occur when too much rain or melted snow fill river or creek basins too quickly. Along Tennessee's rivers and streams, flooding is a natural part of life and most common during winter and early spring. Frozen ground, sparse vegetation, and less evaporation are all factors that allow water to run off the land and reach the rivers quickly during the cold months.

The States of Virginia and North Carolina will highlight Winter Awareness during the week of December 5th-11th. The National Weather Service in Morristown and the Tennessee State Emergency management Agency will highlight November 16th-18th to bring these hazards to the attention of the public. We will be sending information through our communications network including the National Weather Service's NOAA Weather Radio during this period. We hope you will all join in this effort to make this the safest winter possible.

From the Meteorologist in Charge—George Mathews

First of all I would like to say "Hello" to all of you as I get settled into my new job here at the Morristown forecast office. Jerry McDuffie sends his warm wishes to all of you from his new active retirement lifestyle.

Although I was raised in Dalton, GA, I've been out west, in West Texas and Oklahoma for the past 17 years. It's certainly great to be closer to home and we plan on raising our children here.

With the subject of winter weather I wanted to say a few things that I personally think are important that may not automatically register in everyone's consciousness.

I feel that the most important safety rule in winter weather is realizing (deep-down) that you have choices and can be flexible. Over the holidays many

people do a lot of traveling and sometimes there is a big winter storm on the day you want to travel. When I talk about choices I'm mainly talking making good choices about traveling in winter weather. I think too many times we get caught up in the "have to" situations when we really don't "have to"—everything we do involves a choice (whether we appreciate it or not).

So saying, "We have to travel to Granny and Pap's house on Christmas Eve", seems to be locking you into a strict



Know the Threat!!

Snow and Freezing Rain

Heavy snow and/or freezing rain can immobilize a region and paralyze a city. Accumulations of snow can collapse buildings and knock down trees and power lines. Rural areas may be isolated for days. It is recommended that each household have provisions and the ability to remain self-sufficient for at least 3 days without power, or help, as it may take this long to reopen main roads and reestablish vital services.

Hypothermia

Warning Signs

Uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness and apparent exhaustion.

Detection

Take the person's temperature. If below 95 degrees F, immediately seek medical care. This is a life threatening situation. If care is not immediately available, begin warming the person slowly. Warm the core first. Get the person into warm clothing and wrap them in a warm blanket covering the head and neck. Do not give the person alcohol, drugs, coffee, or any very hot beverage or food, warm broth is better. Do not warm the extremities first, this drives cold blood toward the heart and may cause heart failure.

Wind Chill

Wind Chill is based on the rate of heat loss from exposed skin caused by the combined effects of wind and cold. As the wind increases, heat is carried away from the body at an accelerated rate, driving down the body temperature. Animals are also affected by wind chill. The biggest question that always comes up with wind chill is, does it affect water pipes and car radiators. The answer is no, the accelerated loss of heat occurs on exposed skin only.

Frostbite

Frostbite is damage to body tissue caused by the tissue being frozen. Frostbite causes the loss of feeling and a white or pale appearance in extremities, such as fingers, toes, earlobes, or the tip of the nose. If symptoms are detected, get medical help IMMEDIATELY. If you must wait for help, slowly re-warm affected areas. If the person is also showing signs of hypothermia, warm the body core before the extremities.

Flooding

Winter is approaching and in addition to being cold and possibly snowy, it's also the flood season. Leaves are off the trees, and the ground is either frozen or substantially wet. Leaves trap rain and regulate the rate at which it hits the ground and sinks in. Less leaves = more rain hitting the ground faster. Wet or frozen soils can hold much less water than dry ones, and so more water hitting the ground means more runoff, instead of percolating down into the water table. More runoff = more flooding.

The summer and fall have been wetter than normal, and the pattern appears to be continuing so far. During September three tropical storms (Frances, Ivan, and Jeanne) ran straight over the top of us, each producing heavy rains and flooding. One lesson we were reminded of is this: it does not have to rain where you are, for you to flood. The heaviest rains from each of these storms fell in western North Carolina, but the flooding was significant to near record levels in Tennessee. Remember the two primary rules of flooding: water flows downhill and collects in low spots. If you live along a stream or in another low spot, the water came from somewhere higher than you and will come to you eventually.

Rules of safety in rain events are to keep an eye on bodies of water at all times. Pay attention to the weather where you are AND upstream from you. NEVER drive through water over the road. If you come to a closed or flooded road, TURN AROUND! DON'T DROWN! Don't make law enforcement officials have to go looking for your next of kin. If you follow these simple rules, you will never have to say, "The flood came up so fast! I never had a warning!"

Before the Storm—Know the Terms

A **Winter Weather Advisory** is issued when ice or snow is expected to hinder travel, but conditions are not serious enough to require warnings.

Freezing rain is forecast when expected rain is likely to freeze as soon as it strikes the ground, potentially creating a coat of ice on roads and walkways. Sleet consists of small particles of ice mixed with rain. Sleet causes roads to freeze and become slippery.

A **Winter Storm Watch** means that severe winter weather is possible within the next

day or two.

A **Winter Storm Warning** means that severe winter weather conditions are expected within the next 24 hours. A blizzard warning means that heavy snow and winds of 35 mph or more are expected.

Be Prepared – Keep a battery powered radio and flashlights in working order, stock extra batteries.



Before the Storm—Preparations

Be Prepared – Keep a battery powered radio and flashlights in working order, stock extra batteries.

Store drinking water and have food that can be prepared without an electric or gas stove. Stock emergency water and cooking supplies. Have candles and matches available in case of a power outage. Be careful how you use them.

Be certain that needed medications are available.

Be Prepared for isolation at home – Make sure you have sufficient heating fuel; regular fuel sources may be cut off. Have some kind of emergency heating equipment and

fuel so that you can keep at least one room warm, but do NOT use a gas fired grill inside the home. Take measures to protect plumbing from freezing. Contact local utilities for winter tips.

Keep your car or truck “winterized” - Winterizing includes being certain about antifreeze protection levels and use a gasoline additive to reduce gasoline freezing. Carry a “Winter Car Kit” that includes high energy foods, a windshield scraper, flashlight, tow rope or chain, shovel, tire chains, blanket, bag of sand or salt, fluorescent distress flag and an emergency flare – all in case you’re trapped in your vehicle by a winter storm. Keep extra gloves, mittens, hats, earmuffs and outerwear in the vehicle throughout the winter.



During the Storm

Stay Informed – Listen to radio or television for updates on weather conditions. With early warning, you may avoid being caught in the storm, or at least be better prepared to cope with it.

Dress for the season : Avoid getting wet – Many layers of thin clothing are warmer than a single layer of thick clothing. Mittens are warmer than gloves. Wear a hat; most body heat is lost through the top of the head. Cover your mouth to protect lungs; don't directly inhale extremely cold air.

Overexertion can bring on a heart attack – a major cause of death during and after winter storms – If shoveling snow isn't critical, don't do it. If you must shovel, don't overexert yourself.

If you are isolated at home – Conserve fuel by keeping your house cooler than usual and by "closing off" heat to some rooms. When kerosene heaters are used, maintain ventilation to avoid toxic fumes. Use only the fuel recommended by the

manufacturer and follow operating instructions. Use a carbon-monoxide detector/ alarm and a smoke alarm.

Do Not Drive into Worsening Conditions – If you must travel, take winter driving seriously. Travel by daylight, and keep others informed of your schedule. Drive with extreme caution. Never try to save time by driving fast or by using back-road shortcuts.

If a Blizzard traps you in your vehicle – Pull off the highway, stay calm and remain in your vehicle where rescuers are most likely to find you. Set your directional lights to "flashing" and hang a cloth or distress flag from the radio antenna or window.

Do not set out on foot unless you can see a building close by where you know you can take shelter. Be careful: distances are distorted by blowing snow. A building may seem close, but actually may be too far away to walk to in deep snow.

Trapped in a Vehicle

If you run the engine to keep warm, open a window slightly for ventilation. This will help protect you from possible carbon monoxide poisoning. Periodically clear away snow from the exhaust pipe.

Exercise to maintain body heat, but avoid overexertion. In extreme cold, use road maps, seat covers, and floor mats for insulation. Huddle with passengers and use your coats as blankets.

Never let everyone in the car sleep at one time. One person should always be awake to look out for rescue crews.

Be careful not to use up all battery power. Balance electrical energy needs – the use of lights, heat and radio with supply. At

night, turn on the inside dome light, so work crews can spot you.

If in a remote area:

Spread a large cloth or the vehicle floor mats on the snow to attract rescue personnel who may be surveying the area from above. Once the blizzard passes, you may need to leave the car and proceed on foot to better shelter.

Keeping in Touch After any disaster, friends, relatives, insurance adjusters, etc. may need to locate you and your family. The following tips may reduce the confusion associated with making contact:

Evacuations

(1) Before evacuating your home, establish a contact person (and phone number) out of the potential disaster area where friends and relatives should “check-in” with each other.

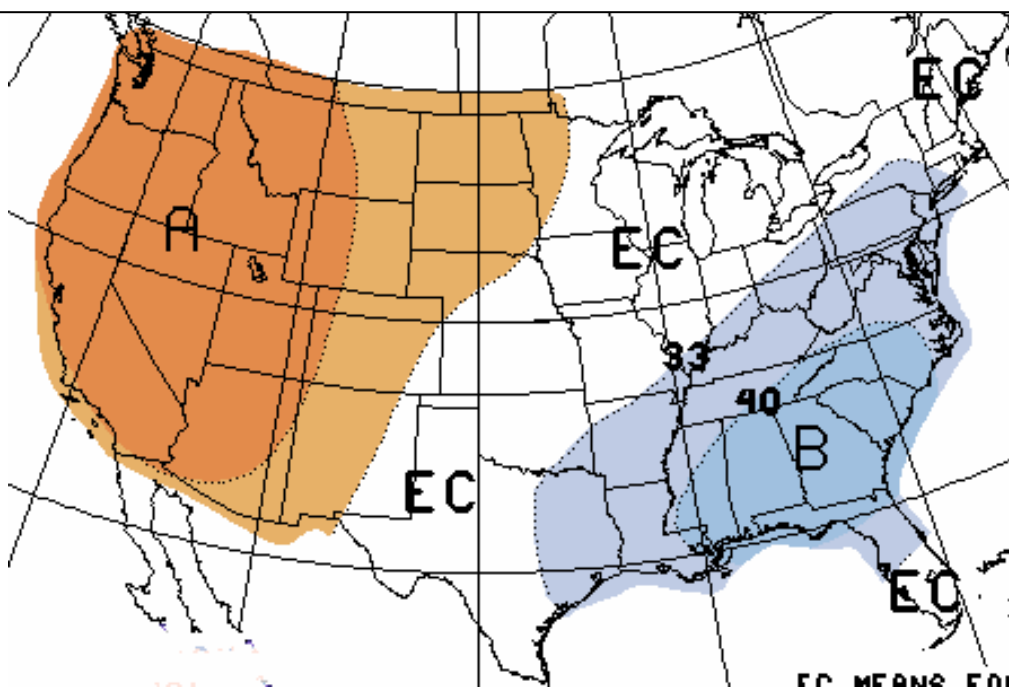
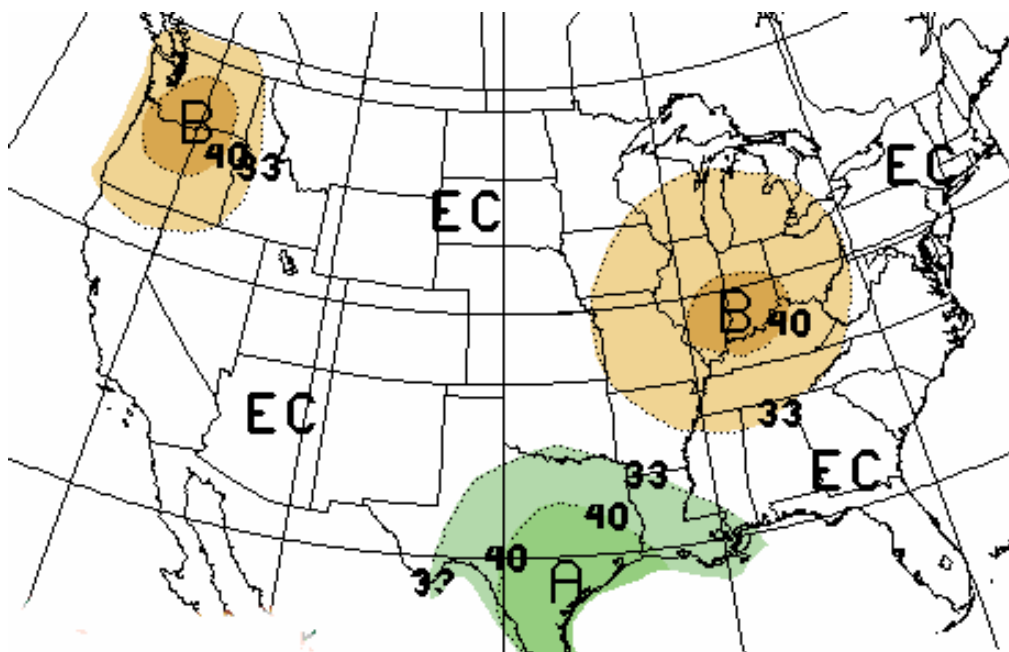
(2) When you evacuate, consider leaving a note, securely attached to the front door, telling where you can be reached – but only if you have reason to believe someone might come looking for you.

(3) If widespread damage occurs, insurance adjusters or others might have trouble identifying your home or finding you. After the danger is over, therefore, consider spray painting the following information somewhere that is highly visible: Name, address, insurance company, policy number and contact number

Winter Outlook—Dec 2004—Feb 2005

(B—Below Normal, A—Above Normal, EC—Equal Chance of Normal)

Precipitation



Temperature

	December	January	February	Season
<u>Bristol</u>				
Normal High Temp	47.8	44.1	48.9	46.9
Normal Low Temps	26.8	24.3	27.0	26.0
Normal Temperatures	37.3	34.2	38.0	36.5
Normal Precipitation	3.39	3.52	3.40	10.31
Normal Snowfall	2.2	5.5	4.1	11.8
<u>Knoxville</u>				
Normal High Temperature	49.8	46.3	51.7	49.3
Normal Low Temperature	31.9	28.9	31.8	30.9
Normal Temperature	40.9	37.6	41.8	40.1
Normal Precipitation	4.49	4.57	4.01	13.07
Normal Snowfall	0.7	3.7	3.0	7.4
<u>Chattanooga</u>				
Normal High Temperature	52.0	48.8	54.1	51.6
Normal Low Temperature	32.7	29.9	32.6	31.7
Normal Temperature	42.4	39.4	43.4	41.7
Normal Precipitation	4.81	5.40	4.85	15.06
Normal Snowfall	0.1	2.0	1.3	3.4

Records

All Time Cold Temperatures

Chattanooga	-10	Feb 13, 1899, 1/31/1966	1/21/1985
Knoxville	-24	Jan 21, 1985	
Tri-Cities	-21	Jan 21, 1985	

Coldest Average Winter

Chattanooga	34.8	1962-63
Knoxville	34.2	1963-64
Tri-Cities	30.0	1976-77, 1977-78

Coldest Monthly Average

	Dec		Jan		Feb	
Chattanooga	34.3	1917	28.5	1977	33.8	1895
Knoxville	29.2	1876	26.7	1940	30.5	1895
Tri-Cities	27.8	1963	22.1	1977	28.1	1958

Snowfall

	Dec		Jan		Feb		Mar		Seasonal	
Chattanooga	14.8	1886	15.8	1893	17.3	1895	20.0	1993	23.9	1894-95
Knoxville	25.4	1886	15.1	1962	25.7	1895	20.2	1960	56.7	1959-60
Tri-Cities	12.9	1963	22.1	1966	20.4	1979	27.9	1960	51.0	1959-60

24 Hour Snowfall

Chattanooga	12.0	1886	10.2	1988	9.9	1912	20.0	1993
Knoxville	8.9	1969	12.0	1962	17.5	1960	14.1	1993
Tri-Cities	9.6	1969	13.0	1996	11.5	1996	14.2	1993

MIC from page 2

schedule. If it snows like crazy on Christmas Eve, your trip would likely be very stressful if not quite dangerous. If we at the Morristown office were expecting a big snow storm on Christmas Eve, we hope people are hearing about the details of that forecast and making wise decisions.

Let's say a big snow storm is expected across the region on Christmas Eve (a Friday in 2004). What options are there? If you could leave earlier (on Thursday, the 23rd) and maybe have dry pavement and only increasing high clouds. Or maybe you could wait until Christmas morning as the storm system is making its way out of the area. Even waiting a few hours on Christmas morning may make a huge difference—allowing the road crews to work on the highways and maybe the sun would start peaking through the clouds, helping to melt the snow and ice. If you're traveling a long way, you might be able to take a southern route where the precipitation is mostly rain, or a northern route, north of the main snow region, where only flurries are blowing around the highway. Then if it comes to it, you might even think about canceling the trip—disappointing to the family, but at least you're safe and sound.

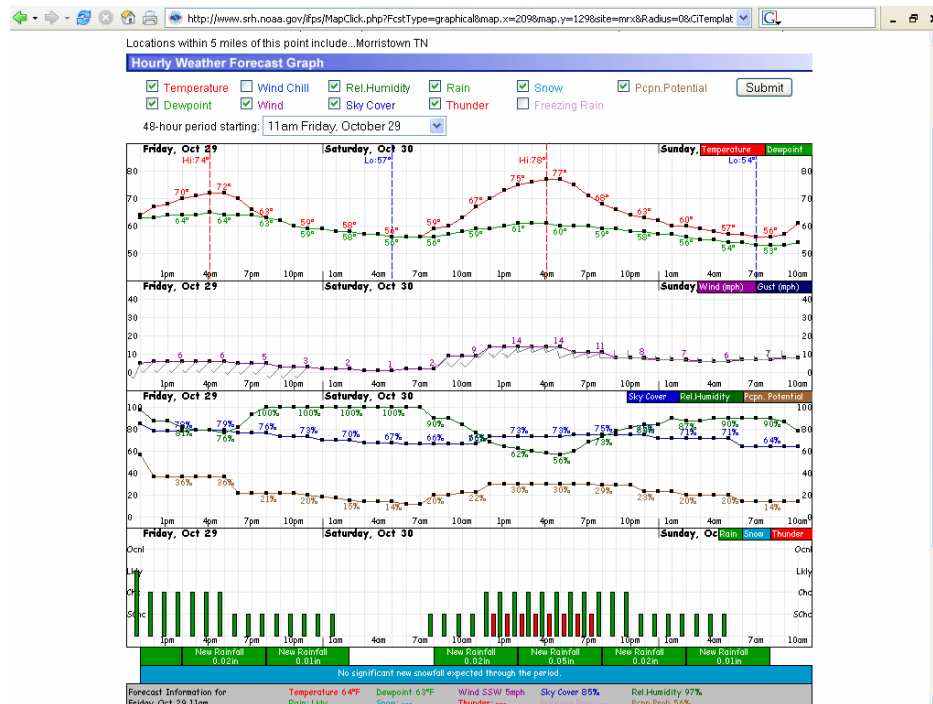
So this holiday season, see if you can build some flexibility into your schedule to allow you to adjust your timing you can make your travel safer and much less stressful.

I've met a few of you so far, and I'm looking forward to meeting many more of you in the coming months.

Have a safe and happy holiday Season!
George Mathews

New Web Forecasts

If you haven't been to our web site recently (www.srh.noaa.gov/mrx or just weather.gov and click on East Tennessee), or don't "browse around", you might have missed some of the new forecasts. Below is the hourly weather graph section demonstrated. This information can give you a great idea of when the forecaster thinks weather will occur within a day. Much more accurate than...This Afternoon...Or After Midnight. Check it out.



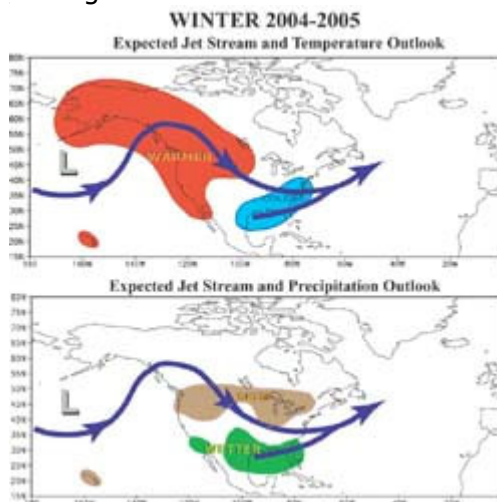
NOAA U.S. WINTER OUTLOOK Entire text at
<http://www.noaanews.noaa.gov/stories2004/s2326.htm>

Oct. 6, 2004 — [NOAA](#) scientists today announced that a number of climate conditions will influence the winter weather across the United States from December through February. The NOAA 2004-2005 Winter Outlook calls for above-average temperatures in Alaska, much of the West and the northern and central Great Plains. Below average temperatures are expected across the Gulf Coast states, the Southeast and the mid-Atlantic region of the U.S.

The winter outlook reflects a blend of impacts associated with weak-to-moderate El Niño events in the central equatorial Pacific Ocean and is based on the likelihood that these conditions will persist through early 2005. El Niño influences the winter weather patterns by affecting the jet stream and the track storms take across the eastern Pacific and North America. NOAA scientists do not expect this El Niño to reach the strength of the 1997-1998 El Niño event.

"Our winter forecast factors in the effects of a weak El Niño that may strengthen into a moderate event during the winter months," said retired Navy Vice Adm. [Conrad C. Lautenbacher](#), Ph.D., undersecretary of commerce for oceans and atmosphere and NOAA administrator. "But we'll keep our eye on other climate features in the Pacific and the North Atlantic that play an important role on the week-to-week variability in our winter weather. These patterns influence the position of the jet stream and dictate where and how winter storms will move."

During weak to moderate El Niño events, shifts in the jet stream change the patterns of storminess over the eastern North Pacific and North America. "In particular, NOAA anticipates enhanced storminess near the Aleutian Islands and in the Southeast U.S., and warmer, drier conditions over western North America," said Jim Laver, director, Climate Prediction Center www.cpc.noaa.gov.



(<http://www.noaanews.noaa.gov/stories2004/images/winteroutlook2004-05-jetstream.jpg>

for high resolution version, which is a large file. Please credit "NOAA.")

Also, the climate system called the North Atlantic Oscillation plays an important role in modulating the winter weather over the eastern half of the U.S. The NAO is a climate pattern that influences the position of the jet stream over the North Atlantic, affecting winter weather over the Northeast.

"To a large extent, our forecast of equal chances of above or below normal temperatures and precipitation over the northeastern U.S. is based on the NAO, which is only confidently predicted one to two weeks in advance," said Ed O'Lenic, meteorologist at the NOAA Climate Prediction Center. Impacts from the NAO are included in the NOAA Climate Prediction Center's 8-14 day and 6-10 day outlooks and U.S. Hazards Assessment.

For more information contact the National Weather Service at (423) 586-3771 or e-mail Howard.waldron@noaa.gov, regular mail 5974 Commerce Blvd; Morristown, TN 37814, or your **LOCAL** Emergency Management Director.